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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,269

10/04/2006

Yusuke Konagai

YAMA:133

9215

37013 7590 12/23/2008
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EXAMINER

MONIKANG, GEORGE C

ART UNIT

PAPER NUMBER

2614

MAIL DATE

DELIVERY MODE

12/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,269	Applicant(s) KONAGAI, YUSUKE	
	Examiner GEORGE C. MONIKANG	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/585,269.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/25/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 8/18/2008, with respect to the rejection(s) of claim(s) 1-8 under 10/585,269 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Yanagawa et al, US Patent 5,233,664.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa et al, US Patent 5,233,664, in view of Hatae, US Patent 5,675,655, and further in view of. Yoshida, JP 1999-01-29. (The Yanagawa et al and Yoshida reference are cited in IDS filed 10/1/2007)

Re Claim 3, Yanagawa et al discloses an audio signal supply apparatus, for a speaker unit comprising a plurality of loudspeaker array units (Yanagawa et al, fig. 1: SP1-SP_n), comprising: a branching unit that branches an input audio signal into two or more signals (Yanagawa et al, fig. 1: x); a plurality digital FIR filters with coefficients corresponding to each speaker unit, the filter coefficients being determined in accordance with the directivity pattern generated in the control (Yanagawa et al, fig. 1: DF1-DF_m; col. 1, lines 60-65) but fails to disclose a delay unit that provides a first delay for one of the branched audio signals; a second delay unit that provides a second delay for another of the branched audio signals. However, Hatae discloses a FIR filter that has within it delay elements (Hatae, fig. 7: 202-205; col. 7, lines 29-37). Hatae also discloses a switch that can switch between a wide directivity control and a narrow directivity control (Hatae, col. 4, lines 50-54). It would have been obvious to exchange the FIR filter with delay elements of Hatae (Hatae, fig. 7: 202-205; col. 7, lines 29-37) with the digital FIR filters of Yanagawa et al and also incorporate within the control of Yanagawa et al (Yanagawa et al, fig. 1: 1), the ability of switching between wide and narrow directivity as taught in Hatae (Hatae, col. 4, lines 50-54) for the purpose of being able to provide sounds to hearing impaired individuals while still providing sounds to individuals without any hearing impairment. Yanagawa et al and Hatae also fail to disclose a directivity control unit that generates the first directivity control information and the second directivity control information so that a directional characteristic of a speaker unit obtained by the first differs from the directional characteristic of a speaker unit obtained by the second; and an adding unit that adds the first and second

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processed signals applied to each of the respective loudspeakers. However, Yoshida discloses being able to control each of the individual speakers in a speaker array to have different directivity patterns along with adders to produce control output signals to the speaker array (see abstract). It would have been obvious to exchange the speaker control of each individual speaker to different directions with the control of Yanagawa et al (*Yanagawa et al, fig. 1: 1*) and also incorporating within the control of Yanagawa et al, the ability to switch between wide directivity and narrow directivity patterns as taught in Hatae (*Hatae, col. 4, lines 50-54*) for the purpose of being able to provide different sound directivity to multiple users simultaneously.

Re Claim 1, the combined teachings of Yanagawa et al, Hatae and Yoshida disclose the audio signal supply apparatus according to claim 3, further comprising: a weighting unit that weights each of the delay processed audio signals from the first and second delay units to be supplied to the loudspeaker units accordance with provided gain control (*Yanagawa et al, fig. 1: A1-Am*); and a storage unit that stores the first control information (*Yanagawa et al, fig. 1: 2*), which sets the directional characteristic of the array speaker unit as a narrow directivity (*Hatae, col. 4, lines 50-54*), and the second control information, which sets the directional characteristic of the array speaker unit as a wide directivity (*Hatae, col. 4, lines 50-54*), wherein the directivity control unit instruction, also the gain control information and supplies the gain control information to the weighting unit (*Yanagawa et al, fig. 1: A1-Am*).

Re Claim 2, the combined teachings of Yanagawa et al, Hatae and Yoshida disclose the audio signal supply apparatus according to claim 1, wherein the amount of

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delays obtained by the second is 0 or an equal amount (*Hatae, col. 6, lines 53-60; col. 6, line 65 through col. 7, line 4*).

Claim 4 has been analyzed and rejected according to claim 3.

Claim 5 has been analyzed and rejected according to claim 2.

1. Re Claim 6, the combined teachings of Yanagawa et al, Hatae and Yoshida disclose the audio signal apparatus of claim 3; a frequency property correction unit that corrects frequency property of audio signals (*Hatae, col. 6, lines 9-28: adaptive filter*).

Claim 7 has been analyzed and rejected according to claim 1.

Re Claim 8, the combined teachings of Yanagawa et al, Hatae and Yoshida disclose the audio signal supply apparatus according to claim 4, wherein the directional characteristic of the array speaker unit obtained through the first delay overlap with the directional characteristic of the array speaker unit obtained through the second delay (*Hatae, fig. 5; fig. 7: 202-205; col. 7, lines 29-37*).

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GEORGE C. MONIKANG whose telephone number is (571)270-1190. The examiner can normally be reached on M-F. alt Fri. Off 7:30am-5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George C Monikang/
Examiner, Art Unit 2614

11/20/2008

/Vivian Chin/

Supervisory Patent Examiner, Art Unit 2614